

Title (en)

A NEW DOPING STRATEGY FOR LAYERED OXIDE ELECTRODE MATERIALS USED IN LITHIUM-ION BATTERIES

Title (de)

NEUE DOTIERUNGSSTRATEGIE FÜR GESCHICHTETE OXIDELEKTRODENMATERIALIEN ZUR VERWENDUNG IN LITHIUM-IONEN-BATTERIEN

Title (fr)

NOUVELLE STRATÉGIE DE DOPAGE POUR MATÉRIAUX D'ÉLECTRODE D'OXYDE EN COUCHES UTILISÉS DANS DES BATTERIES AU LITHIUM-ION

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Abstract (en)

[origin: WO2022272139A1] The present invention features a new way of doping layered cathode materials in lithium ion batteries. Using a "high entropy" or "cocktail" doping strategy, more than four impurity elements can be introduced to the host materials. The present invention applies this high entropy doping strategy to a high nickel content layered oxide material and a lithium-manganese rich material. This novel high entropy doping strategy allows the layered oxide materials used in the positive electrode of lithium ion battery to achieve high energy density, long life cycle and reduced reliance on the expensive and toxic cobalt, all of which are desired attributes for improving the performance of lithium ion batteries and reducing their cost.

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